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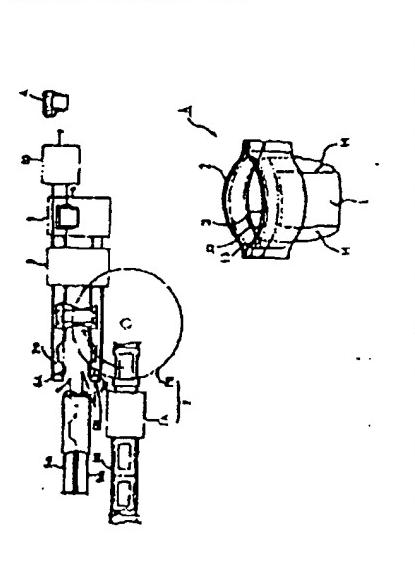
(54) MANUFACTURE OF BRIEFS TYPE DISPOSABLE
DIAPER

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(57) Abstract:

PURPOSE: To reduce costs by enabling an automatic large-scale production method by forming a back body wrapping part and front body wrapping sections to place a diaper main body thereon orthogonally and to bond it thereto.

CONSTITUTION: Optional stock is selected for a back body wrapping section and front body wrapping sections (2 and 3) independently of diaper body 1. In other words, the diaper body 1 is relayed to a turning transfer device 7B behind a suction conveying device 7A and the diaper body 1 is turned by 90° to be supplied to a specified position between belt bodies 2a and 3a of both body wrapping sections perpendicular thereto. Then the diaper body is conveyed to a bonding means 8 to bond it integrally with the belt bodies 2a and 3a of both body wrapping sections. Thereafter, the assembly is conveyed to a folding means 9 to be folded double and side ends of the belt bodies 2a and 2b of both the body wrapping sections are cut while being bonded by a bonding/ cutting means 10.



full translation attached
no equiv. outside Japan

Translation of

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Number of claims 1

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Title of the invention Brief-type disposable diaper production
method

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Specification**1. Title of the invention**

Brief-type disposable diaper production method

2. Scope of the patent claim

A brief-type disposable diaper production method involving

a process whereby a water-absorbent material is inserted between an outer sheet and an inner sheet to form a diaper body; a process whereby a front waistband and a continuous back waistband having an elastic member at least at the side is formed;

a process whereby the diaper body is overlapped and adhered to both waistbands in the transverse direction;

a process whereby the diaper body is folded double and both waistbands are brought into contact; and

a process whereby the contacted waistbands are cut to prescribed dimensions and the regions near the cuts are adhered to integrate the waist parts at the edge portions

to produce a brief-type disposable diaper from a diaper body and a single waistband.

3. Detailed description of the invention

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Field of industrial use

The present invention relates to a brief-type disposable diaper production method.

Prior art

Known technology relating to this type of brief-type disposable diaper production method is disclosed in Japanese Unexamined Patent Application Number S57-77304: "Diaper-brief and Production Method Therefor".

Problems to be overcome by the invention

The abovementioned technology is disadvantageous in that as there is a cut-out portion in order to form an opening for the wearer to insert his/her legs, it is necessary to add a process for forming the cut-out portion, which raises production costs.

Means of overcoming the abovementioned problem

The present invention overcomes the abovementioned problem of the prior art and allows the production of brief-type disposable diapers by an automated large-scale production method involving a process whereby a diaper body is formed; a process whereby a back waist part and front waist part are formed; a process whereby the diaper body is overlapped and adhered to both waist parts in the transverse direction; and a process whereby the diaper body is adhered and integrated.

Embodiment

The present invention is described in detail based on the embodiment shown in the following drawings.

Figures 4 through 6 show an example of a brief-type disposable diaper produced according to the present invention: 1

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represents the diaper body, formed by inserting absorbent material 13 between outer sheet (for example, a water-impermeable P.E. sheet) 11 and inner sheet (for example, water permeable nonwoven cloth) 12.

2 is the back waist part and 3 is the front waist part, and the material for both waist parts 2 and 3 may be selected independently from the material for diaper body 1, although in this embodiment, the same material is used; the double layer having P.E. sheets 21 and 31 as the outside and nonwoven cloth 22 and 32 as the inside is formed, an elastic member sheet (for example, a polyurethane sheet) 23 and 33 is inserted into part thereof, so that at least the upper edge is expandable. It should be noted that it is also possible to have a single layer elastic sheet, to form a completely expandable construction. It should be noted that as waist parts 2 and 3 are preferably of an air-permeable material, it is desirable either to take the nonwoven cloth and elastic sheet, and exclude the P.E. sheet, or, when a P.E. sheet is used, to puncture a plurality of small holes therein. It is also possible to totally or partially affix the elastic member (rubber thread, rubber tape or the like) to a sheet of suitable material, to form an elastic sheet.

Moreover, the hole parts H for the insertion of the wearer's legs are dictated by the width and shape of the diaper body 1 and the width and shape of waist parts 2 and 3, and generally, the shape is such that the holes are toward the front side.

The brief-type disposable diaper production method of the

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present invention will be described below with reference to Figures 1 through 3.

Figure a shows the diaper body 1 production process: absorbent body 13 is placed on outer sheet (back sheet) 11 supplied from outer sheet roller 11a, then inner sheet (top sheet) 12, supplied from inner sheet roller 12a, is supplied thereon, to achieve a sandwich-like insertion of absorbent body 1 between outer sheet 11 and inner sheet 12; then this is transported by the first conveyor device 4 to adhering-cutting device 15, and the circumference is firmly adhered by adhering-cutting device 15, or adhered with adhesive, then cut to the required shape. It should be noted that this process is the same as known diaper production processes, and it is possible to employ a conventional production line for disposable diapers.

It should be noted that the adhering-cutting device 15 comprises two stages: first unit 15a and second unit 15b. In first unit 15a, only adhesion and the cutting of cut-away parts P proceeds, to continuously form diaper body 1, then diaper body band 1a is transported to the next process, and may be cut crosswise to the required dimensions by second unit 15b when in the vicinity of the waistbands 2,3-adhesion process.

Moreover, as there are no cut-away parts P when diaper body 1 is long, it is also possible to achieve the aims of the present invention by only adhering in first unit 15a, then cutting in second unit 15b.

There are various possible shapes for the cut-away parts P, and the shape can be selected according to the shape of the

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waistband 2,3 and the desired shape of hole parts H.

Figure 1(b) shows a waistband 2, 3 production line: elastic member sheet 23a, supplied by elastic member sheet roller 14, is cut along a continuous S-shaped cutting line in the central portion by cutting device 24 to form a pair of bands, back waistband 2a and front waistband 3a.

It should be noted that in the case of the multilayer constructions shown in Figure 3 (outer sheet (P.E. sheet) and elastic member sheet, inner sheet (nonwoven cloth) and elastic member sheet, or outer sheet and elastic member sheet-inner sheet), if elastic member sheet 23a is a band of the same width, and only part of sheet 21a, 22a is adhered, the elastic member sheet can be used effectively without cut-away parts, and holes of the desired shape can be found by selecting a suitable shape for waist part 2,3.

Figure 1(c) integrates the diaper body 1 process of Figure 1(a) and the waistband 2a, 3a process of Figure 1(b), to show the brief-type disposable diaper-forming process: the second conveying device 5a, 5b for waistbands 2a, 3a extends to become the third conveying device 6A and the force conveying device 6B.

Diaper body supply means 7 comprises suction conveying device 7A and rotation conveying device 7B, such that suction conveying device 7A for conveying the diaper body 1 that has been cut to the required dimensions is provided at the end of the first conveying device 4, after which diaper body 1 proceeds onto rotation conveying device 7B, then rotation conveying device 7B rotates the diaper body 1 through 90°, to supply diaper body 1

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transversely to a prescribed position on waistband 2a, 3a.

It should be noted that rotation conveying device 7B receives the diaper body 1 on the conveying surface of suction conveying device 7A then supplies it by rotating 1/4 of a rotation while suction continues, then rotating the diaper body 1 that is between third conveying device 6A and fourth conveying 6B through 90°, and diaper body supply means 7 can achieve the aim by means of a suitable conveying means as follows: the adsorption surface of the diaper body is rotated through 90° according to the rotation of a suction rotation drum provided so as to be continuous with suction conveying device 7A, then the diaper body proceeds to a suction conveyor belt, whereupon it is conveyed in a transverse direction with respect to the conveying devices, thereby allowing diaper body 1 to be supplied between waistbands 2 and 3.

Diaper body 1 is then conveyed to adhesion means 8 and adhered to waistbands 2a, 3a by a suitable adhesion means such as an adhesive or heat seal.

It is then conveyed to folding means 9, and folded double by said folding means 9 to superimpose front waistband 2a and back waistband 3a.

The sides of the superimposed waistbands 2a and 2b are adhered and cut to the required shape by adhering-cutting means 10, to yield brief-type disposable diaper A.

Advantages of the invention

The present invention yields a brief-type disposable diaper by adhering and integrating a pair of waistbands and a

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diaper body and cutting to the required dimensions and so conventional diaper production lines can be used for the diaper body, the waist parts are supplied as bands and automated mass production is possible due to a belt conveying device, so the brief-type disposable diapers can be effectively produced at extremely low cost.

4. Brief description of the drawings

Figure 1 is an explanatory diagram for the brief-type disposable diaper production method of the present invention: Figure (a) shows the diaper body production process, and Figure (b) shows the waistband-integrating process.

Figure 2 is a diagram of the diaper body, and Figure 3 shows the front waist part and back waist part.

Figure 4 shows an oblique view of a brief-type disposable diaper produced according to the present invention, Figure 5 is plane view and Figure 6 is a cross-sectional view of the diaper body.

- 1 Diaper body
- 2 Back waist part
- 3 Front waist part
- 7 Diaper body supply means
- 8 Adhesion means
- 9 Folding means
- 10 Cutting means

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卷面号J-170053(2)

月夜の月で、また月を覗かし、又又月の上に月見
の歌を歌ひよるうのである。

〇三八

以上は前回に承り貢献者にむとづいて、又其の
経験である。

ヨリ4回力更第6回は本発明により当國されたアリーフ紙使い捨ておひつの一例を示し、1は80
ツキほどで、丸葉シート（例えば、丸葉承認シートであるP. D. シート）11と内葉シート12
(例えば、認承シートである不織紙)とて、組
成物13を組み込んで形成されている。

2は後輪側面図、3は前輪側面図であり、
測定用引張器2・3は、各セッティングとは独立して
任意の角度を固定できるが、実験ではかねて本
社1と同様の条件を使用し、角度を0°、2°、シーケン
ト21・31、内側を不規則22・32とする二
方向面とし、その一方に外輪面シート（例えは
ボリュレーンシート）23・33を読み込み、少
なくとも上端部においては内輪面のある構造とし
た。28、外輪面シートの直角剛性とし全周

電シート12との間に嵌み込んだねじ、日本車輌製
造13に両側面に複数個穴14により形成し、両側
面が底板16により周囲部を嵌合せ、または側面
部で接着して底板部16に接觸する。28、公知の
おひつの電線工具と同様であり、使用の際いわて
る2つの電線21インチを24Tことがて88.

空港、飛行場の開設をし、またユニット15
とユニット13との3箇所とし、また
ユニット13では飛行場とともに飛行場分野の研
究のんを行なって、飛行場にちかづけをして研究
して、ちかづけは飛行場は13と飛行場に造り込ん
で、飛行場は飛行場2・3との飛行場の飛行場におい
て、飛行場13により飛行場方面に飛行場
飛行場に飛行場してもよい。

また、色々な本ほしの形式を用意すればどうも良
いは、印刷部分だけが不要しないので、もしユニット
としてひとつの用意のみを行なう、またはユニット1
30で印刷することにより印刷を複数することが
できる。

১০. পান্তের গোপনীয়, কমিউনিস্ট

次に、第1回から第3回を参照して、不規則によるブリーフ状況に因てひとつの説明方法を採用する。

4回は、セロフ紙はその質量工数を減し、内張シートトロール1.1と2.2を組合せられた内張シート（バックシート）1.1上に、吸収性ココモ壁紙を貼り、その上に、内張シートトロール1.2と2.4を組合せられた内張シート（トップシート）1.1を貼り付けて、アンドリッパ等に組合せられた内張シート1.1と内

2・3の結果よりモルタルの強度に
より他のものと比較するならば、

式の6回は、鋼板用引抜鋼板は2・3のスロットラインを用し、現在ヨコシートロール14より販売された内にヨコシート330を所蔵用具24に取りゆき支店の運送室取扱所にて貯蔵して一方の鋼板体を形成し、一方を荷物用車り搬はね3とし運搬する用意用具を準備する。

左側、第3欄に示すことく、外質シート（P、E、シート）と内質吸材シート、内質シート（不織布）と内質吸材シート、または外質シートと内質吸材シート内質シートとの多層相溶とする場合には、内質吸材シートごとに同一市の荷役規則などとして同一シート210×220の一端にのみ開口すると、内質吸材シートを効果的に吸湿作用を発揮することなく使用が可能で、且つ開口ケタ210の形状を任意に選択し、開口の形状の開口部を形成することができます。また吸湿性。

前回のとおりは、今回の80%ほどはひと、ひとの内訳を説明せねばならない。一括して、

桂平3-17G053(3)

アリーフルートでいざて80つとTモードを示し、D
ロード開拓の運営が終了する。またの第2回選挙は
e・50を経過してある議員選出は8人となり第4
回選挙は8日とする。

第1回は西宮の城内に、西宮主殿に引取られたが、その主殿は西宮の城内を出でたところに立つてゐる。西宮の城内は、西宮の城内を出でたところに立つてゐる。西宮の城内は、西宮の城内を出でたところに立つてゐる。

さて最初されることで、ベルト駆動方式による大
きな機器運搬はとどまることがでて、そのための
コストをアブリーフ駆動方式で抑えつつも実現でき
る可能性がある。

1. 日本の民族学研究

第1回は本見面によるブリーフ所見い捨て第2
つの強制戒律を示す本見面で、本題はおひつ本
の強制戒律、即ち本見面との一連化工作をそ
とくに示すものである。

次2回は800本ほどの販賣額、第3回は8000
本以上が販賣額である。

第4回は本発明により製造されたブリーフケースの
いじておきの機能図、第5回は平頭図、第6回
は本発明の構成図である。

1を算出するが、これは2・3回にわたって4.660
であり、そこでこれを基に平均すれば測定の誤差が
以下の通りを示すことがわかる。

次に指揮学校へ派遣した後、ヒートシール、
ハーフマラソンの選手の成績予想により、これは出でつ
くかどうか田中が成績は2時間30分と見当して一回
RTS。

そののち、改定みずからをへ廻送し、改定みず半
年後により二所状に前回改て前回改めの時刻改
正と改定時刻の時刻改正との間に改定時刻

電気自動車の開発研究は多く、その開発費を、開発初期段階よりより相殺することとに、研究がなに寄附して、アリーフ研究においても大きな影響である。

038034

本発明は、一片の鏡面り成形板体と、なりつてはとを、目ま一化し、開口部に切取ることにより、アリーフ用いきてきりつを見渡すものであるから、なりつ本体は鏡面のなりつ鏡面インを利用することがて、また鏡面り成形板

10--四聲平水

售賣人 楊氏合社 地 址

代理人 孙祖士 风行 文雄

卷一 言文

3-2020-0006

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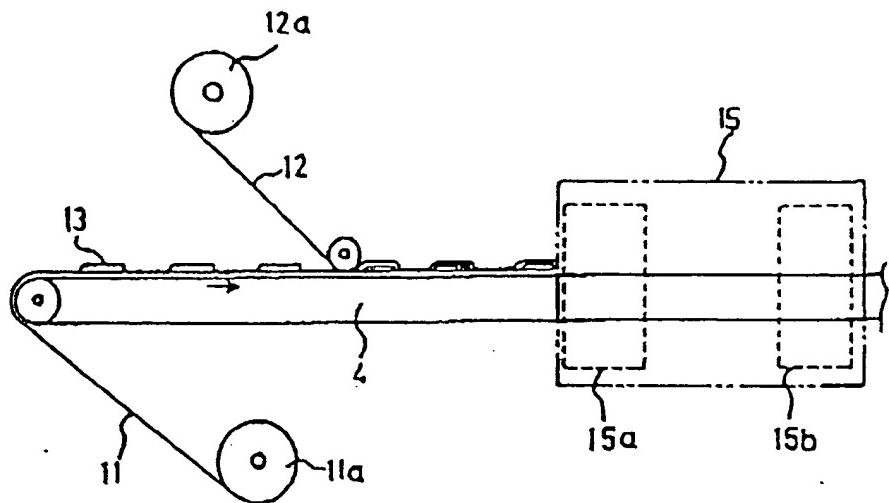
一二二年九月五日星期五

卷之三

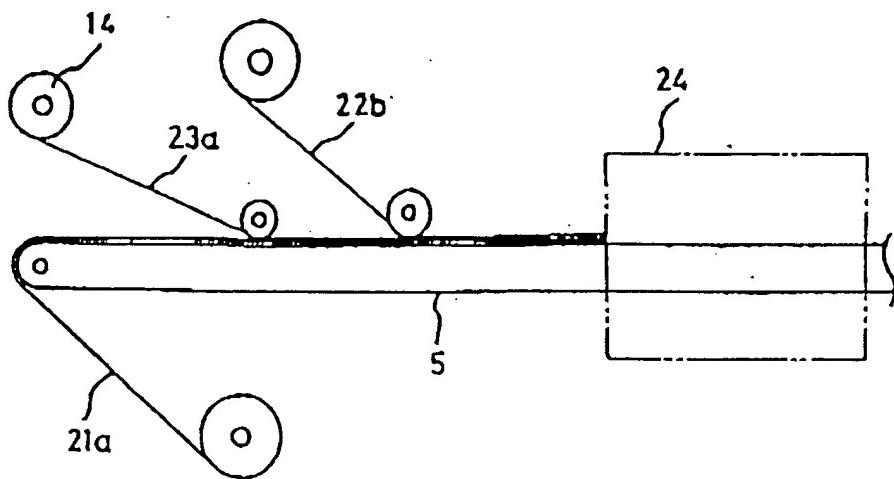
卷之三

特開平3-176053(4)

第1図 (a)

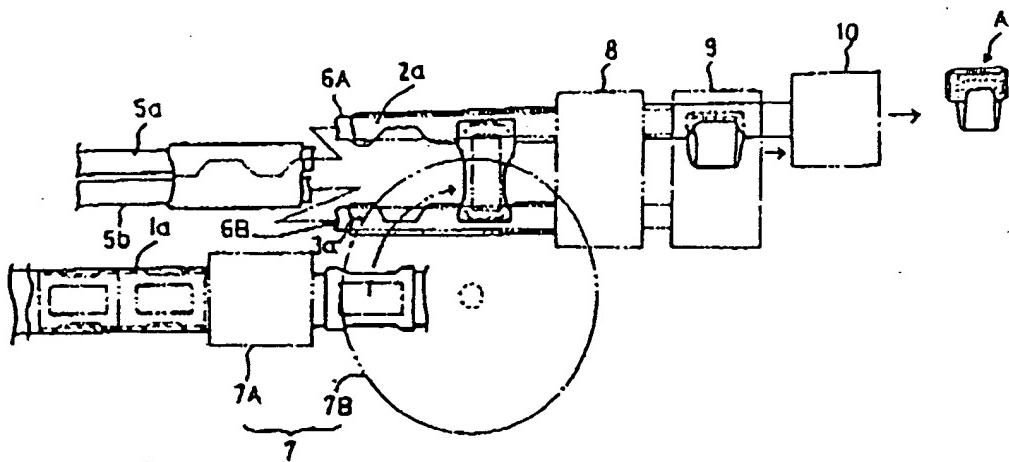


第1図 (b)

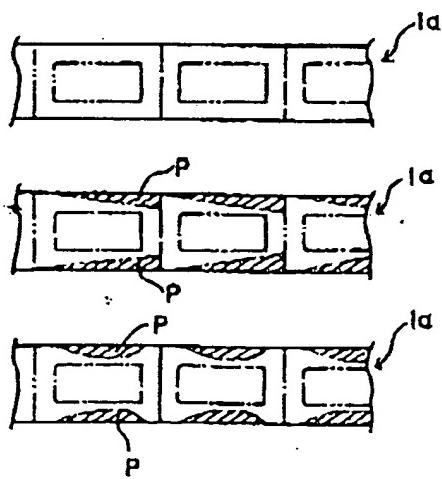


特開平3-176053(5)

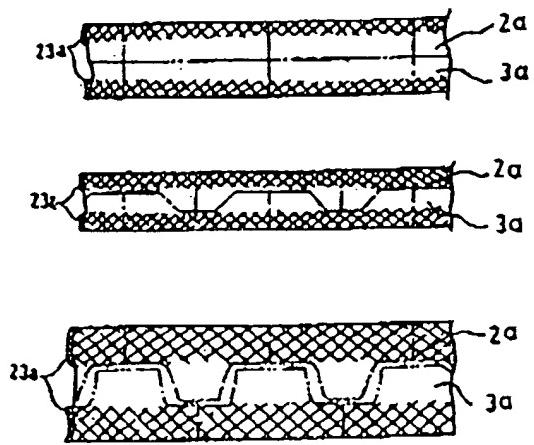
第1図 (C)



第2図



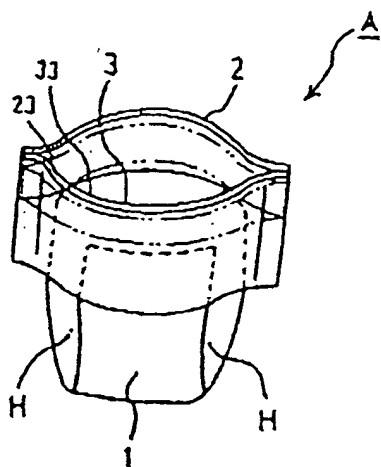
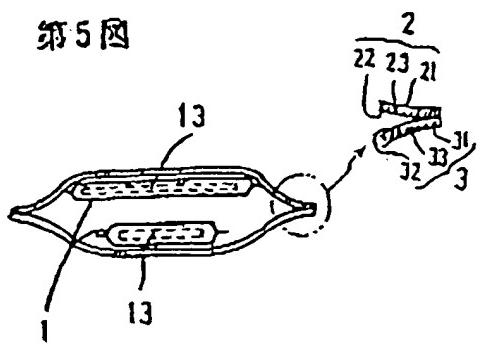
第3図



特開平3-176053(6)

第4図

第5図



第6図

